

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for esterifying a commercial amount of wood, comprising:

(a) removing moisture from the wood with a solvent or electromagnetic radiation to produce dried wood having less than about 8% water by weight;

(b) impregnating said dried wood with alkanoic anhydride; and

(c) heating impregnated wood in a frequency range of about 6 MHz to about 30 MHz to produce esterified wood having a degree of esterification from about 10% to about 25%.

2. (Original) The method of Claim 1, wherein the solvent is a carboxylic acid, a ketone, or an ether.

3. (Original) The method of Claim 1, wherein the solvent is acetic acid and the alkanoic anhydride is acetic anhydride.

4. (Original) The method of Claim 1, further comprising heating said esterified wood under vacuum to remove said alkanoic anhydride, alkanoic acid, and solvent.

5. (Original) The method of Claim 4, further comprising separating said alkanoic anhydride from alkanoic acid and solvent.

6. (Original) The method of Claim 5, further comprising converting alkanoic acid into alkanoic anhydride.

7. (Original) The method of Claim 5, further comprising recycling said separated alkanoic anhydride to be used for impregnating wood in step (b).

8. (Original) The method of Claim 1, further comprising separating and recycling said solvent to be used for removing moisture in step (a).

9. (Original) The method of Claim 1, wherein step (a) comprises removing an azeotropic mixture of solvent and water.

10. (Original) The method of Claim 1, wherein the steps (a), (b), and (c) are performed with the wood remaining within the same vessel.

11. (Canceled)

12. (Previously amended) The method of Claim 1, further comprising heating said esterified wood under vacuum to remove alkanoic anhydride and alkanoic acid.

13. (Canceled)

14. (Original) The method of Claim 1, wherein moisture is removed from wood with a solvent.

15. (Canceled)

16. (Original) The method of Claim 1, further comprising adding alkanoic acid during impregnation of the wood.

17. (Original) The method of Claim 1, wherein the dried wood comprises less than about 6% water by weight.

18. (Original) The method of Claim 1, wherein the wood is loblolly, slash, longleaf, shortleaf, or radiata pine.

19. (Currently amended) A method for esterifying a commercial amount of wood, comprising:

(a) impregnating loblolly, slash, longleaf, shortleaf or radiata pine wood having less than about 8% water by weight with alkanoic anhydride, wherein the impregnation time is about 15 to about 30 minutes;

(b) heating impregnated wood in a frequency range of about 6 MHz to about 30 MHz to produce esterified wood having a degree of esterification of about 15% to about 22%; and

(c) removing alkanoic anhydride and alkanoic acid from said esterified wood, wherein the removal time is less than about 120 minutes to achieve esterified wood having less than about 1% combined alkanoic anhydride and alkanoic acid.

20. (Currently amended) A dimensionally stabilized lumber product, comprising: esterified wood made from a commercial amount of loblolly, slash, longleaf, shortleaf, or radiata pine, wherein said wood is esterified by the process comprising:

(a) impregnating loblolly, slash, longleaf, shortleaf or radiata pine wood having less than about 8% water by weight with alkanolic anhydride, wherein the impregnation time is about 15 to about 30 minutes;

(b) heating impregnated wood in a frequency range of about 6 MHz to about 30 MHz to produce esterified wood having a degree of esterification of about 15% to about 22%; and

(c) removing alkanolic anhydride and alkanolic acid from said esterified wood, wherein the removal time is less than about 120 minutes to achieve esterified wood having less than about 1% combined alkanolic anhydride and alkanolic acid.